August 20, 2006

Minerals Management Service
MS 5412, 1201 Elmwood Park Blvd
New Orleans, LA 70123

Sierra Club, Long Island Group
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Comments on EIS scoping for the LIOWP project:

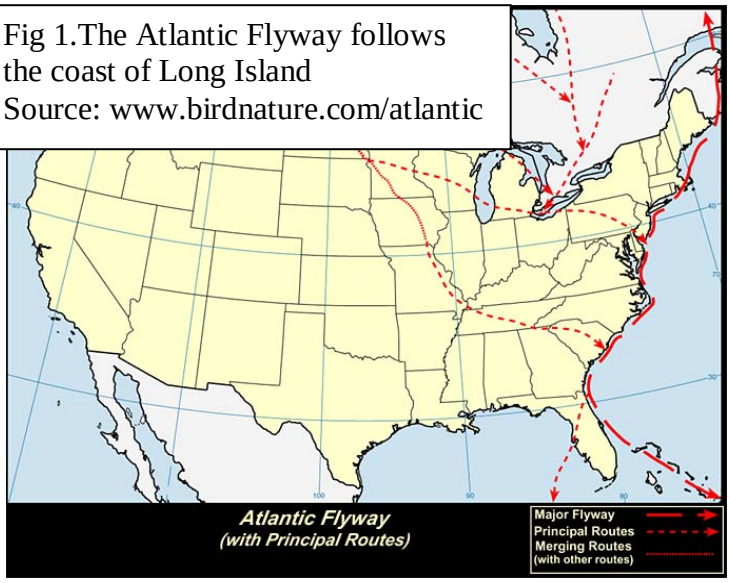
The Long Island Group of the Atlantic Chapter of Sierra Club is an all volunteer organization of environmentally concerned citizens. We are acutely aware that the world's climate is changing due largely to our country's extreme release of carbon dioxide from fossil fuel, and therefore believe that the energy needs of the Long Island community would be best served by the development of renewable energy sources such as wind. The Long Island Offshore Wind Initiative (LIOWI) could serve as an outstanding model for a new era of clean sustainable energy and move our nation away from dependence on foreign oil. However, there are still reasonable concerns regarding the impact of the project's siting on migratory and resident bird populations. For this reason we urge you to require solid studies of bird movement in the area. If subsequent studies indicate a high probability of major and significant impact on bird or other wildlife populations, we recommend seeking an alternative site. If you do not require further rigorous studies and the avian impact is significant, it will be a disaster for both the birds and for wind energy.

The following comments will address our general concerns and suggestions, but for a thorough treatment of the avian risks and recommendations, we urge you to consider the comments submitted by the Fish and Wildlife Service, previous versions of which are included here as supporting material.

Site specific concerns:

The literature on windmills and bird impacts stresses the importance of project placement relative to bird populations. There are good reasons to be concerned about the impact of LIOWI on both migratory and resident bird populations. Almost half of migrating birds in Europe in the North Sea fly offshore at dangerous altitudes for wind farms (Huppop 2006) The Atlantic flyway is a major migratory route that follows the Atlantic coast, and roughly parallels Long Island as shown in Figure 1. Waterfowl, songbirds, and raptors all use this route in great numbers, and points along the route are well known for spotting birds such as hawks. The Great South Bay and the south shore's tidal wetlands have been designated an estuary reserve, and contain rich habitats for birds and other wildlife. The American Bird Conservancy and the US Fish and Wildlife Service labeled such habitats the highest priority bird habitats in the New England/Mid Atlantic region, and the US Shorebird Conservation Plan also notes their importance. The Audubon society has identified nearby

Fig 1.The Atlantic Flyway follows the coast of Long Island
Source: www.birdnature.com/atlantic



Fire Island and Captree Island regions as Important Bird Areas. Radar surveys have found birds to be concentrated in some areas, so there may an optimal turbine placement within this site (Johnson 2004).

Altamont offers the clearest example of the sort of damage that can occur if the bird population is not properly studied in advance. Around 50 golden eagles and hundreds of hawks die there every year, and FPL, a part owner of the wind-farm, has had to shut down some of their turbines there for part of the year to minimize the deaths. It is clearly in the best interest of all parties involved- corporate, human, and avian- to study bird activity at a location in advance.

Migratory Bird Risk:

The following information is adapted in part from the Kerlinger report and the FWS letters. The common loon and osprey, species of special concern with the NYS DEC, migrate in large numbers through this area. Thousand to tens of thousands of waterfowl including cormorants, ducks, gulls and terns, gannets and petrels pass through, and many of these water birds fly at the height of the turbine blades (Exo 2003). Songbirds commonly migrate through the south shore (personal correspondence with Laurie Farber), and are particularly at risk because they fly at night, when most bird strike mortalities occur (in Exo2003). A European study found songbirds colliding with offshore research platforms more frequently than other birds (Huppop2006). Hawks and other predators migrate in smaller numbers, but because of their smaller populations, impact could be proportionally greater.

Resident Birds:

Non-migrating birds also pose a problem. Bird counts show that over-wintering and year- round activity is high in the area (Audubon 2006 CBC) and may include up to 40% of all wintering water birds in the state. The endangered Roseate Tern forages up to 20 miles offshore, and the osprey up to 3 miles offshore. The ranges of many other birds are incompletely known. Offshore birds may also be at risk- petrels come as close as 1 mile to shore.

Windmill design/mitigation of avian mortality:

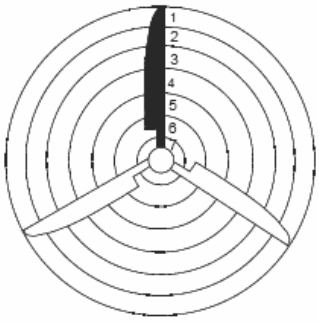
Windmill design could make a difference in risk of avian mortality. The LIOWI design specifies monopoles and low intensity flashing red aviation lights for the inner turbines, both of which are likely to improve upon previous wind farm designs in alleviating bird collision. Other modifications could serve to further minimize this risk, including lower intensity light on the outer turbines as well, painting one blade on each turbine black, and minimizing the size of the service platform.

The basic principles in minimizing avian risk are 1. not attracting birds 2. alerting birds to the obstacles.

1. Lights are known to attract birds at night, and the flashing red lights currently planned for the wind park are less likely than other types to attract birds. (AWEA/ABC 2004) In addition, we encourage the use of the lowest possible intensity lights on all the turbines and the offshore substation. Early wind turbines featured a lattice design which encouraged perching by birds, thereby increasing avian activity in the area. The current monopole design provides only one or two surfaces for perching, but it is important that these be made as small and as inhospitable as possible. The top of the monopole might potentially serve as a perch, and the service platform at the base could clearly serve as a perch. Both of these should be fitted with some permanent to deter bird perching or nesting, and the platform size should be the minimum necessary. Since the offshore substation is very likely to draw birds to perch, it should be located at some sufficient distance from other turbines to minimize collisions from birds flying around it.

2. The spinning blades of the turbine create an optical effect called *smear,* in which the blades blur together and appear semi transparent. This can make it difficult to define the edge of the windmill and contributes to daytime avian collisions. Painting one blade black (see Figure 2) cuts down significantly on this effect, and birds can more accurately recognize the obstacle. This modification would cut down significantly on daytime collisions. There is a potential for long lived migrating birds to learn to avoid wind parks, perhaps by hearing (Desholm 2005).

Fig 2. Design to minimize motion smear. Hotos 2003



Studies requested

Before

We urge that complete data be collected on the numbers, distribution and altitude of birds flying through the project area throughout a complete migratory cycle. The Fish and Wildlife Service has recommended three years of continuous monitoring of the site by radars located on a jack-up barge or offshore platform. It is critical to know whether birds fly at a dangerous height relative to the rotors, or whether they will pass safely above or below them. A stable offshore platform allows the radar to gather this altitude data, and allows the accurate measurement of numbers of birds. FPL has considered onshore radar data collection, but due to the distance from shore this would not yield accurate counts of birds or altitude measurements. Please see the study by Desholm 2004 for more specific recommendations. There will be year to year variation in this data, and for this reason a three year study is optimal. However, knowing that this project is under pressure to continue and fearing that no study may be done at all, we urge MMS to call for a one year continuous study at minimum before the final EIS is accepted. The results of these studies should be used to examine the design and layout of LIOWI, and where possible changes should be made to mitigate the impact on avian activity.

Follow-up

Follow-up studies are needed for all wind parks to assess the degree of the impact on species, and to further mitigate impacts as needed. Since LIOWI is the first offshore park in the country with many likely to follow, it has an even greater responsibility to gather follow-up data. Independent scientific monitoring should be used for these monitoring studies and should continue to document and study the effects post-construction. These ongoing studies should be designed with the goal of further minimizing the environmental impact of the wind farm using the practical knowledge gained by observation. Extensive follow up studies have been performed at Altamont, available on the NREL website, and these have been used to generate recommendations for improved design and management. A different set of studies would apply to an offshore wind park, but see Exo 2003 for a review of the topic for European wind farms. Recommended studies would attempt to document collisions and any changes in migration patterns.

Other issues:

LIPA and FPL have mentioned the possibility of expansion of the wind park if the first park is successful. At a wind park in Norway, the initial wind facility had no significant impact on a resident eagle population, but upon expansion of the wind park, about half of that year's chicks were killed by the turbines. It seems wise to consider the effects of expansion with the

environmental impact of the initial plan, especially if the expansion would not undergo a similar review process.

There is the possibility of an artificial reef forming around the monopoles. If this were to happen, it could have a positive environmental impact on sea life, but birds would be highly likely to enter the area to prey on the fish that would accompany the reef, thereby increasing collision risk. In the balance, we recommend that reef formation be discouraged for this reason.

Finally, we are concerned about the effect of the placement of the aviation lights on aircraft. Because the tips of the turbines extend almost 200 feet above the warning lights, will these lights be positioned properly to warn aircraft?

Conclusion:

We conclude that there are compelling reasons to thoroughly and continuously monitor the area for avian activity by vertical and horizontal marine radar before construction. Project placement and arrangement of turbines should use these studies to mitigate the impact on avian activity. Furthermore, we urge that turbine design and lighting minimize avian mortality, including using the lowest possible intensity warning lights on the structures, minimizing landing places, and using single black blade design. Independent scientific monitoring should be used for the monitoring studies and should continue to document and study the effects post-construction. These ongoing studies should be designed with the goal of further minimizing the environmental impact of the wind farm.

We look forward to seeing the necessary avian studies and recommendations included in the DEIS, and to a wind park which has successfully addressed these important wildlife issues. Thank you for your attention to this commentary.

Respectfully submitted,
Jessica Helm
Conservation Chair, Sierra Club Long Island Group, Atlantic Chapter

This comment was prepared with the assistance, guidance, and review of our volunteer members and volunteer executive committee.

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